



Province of  
British Columbia

Forest Research  
Council

Suite 305  
7671 Alderbridge Way  
Richmond  
British Columbia  
V6X 1Z9

Telephone: (604) 273-6548  
SECRETARIAT ON FORESTRY RESEARCH AND DEVELOPMENT

## FOREST RESEARCH COUNCIL - 1981-82 ANNUAL REPORT

### ADDENDUM

We regret very much that, since this Report went to press, no funds were allocated for our contract research in the budget and so none of the proposals indicated on page 7 can be supported by Council in 1982-83.



The Honorable T. M. Waterland  
Minister of Forests  
Parliament Buildings  
Victoria, B.C. V8V 1X4

## LETTER OF TRANSMITTAL

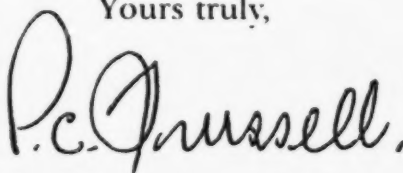
Dear Sir:

I have the privilege to present herewith the first Annual Report of the Forest Research Council of British Columbia for the year ending 31 March, 1982.

It is our hope that we shall look back on this initial year as placing a few foundation timbers in place for a program of continuing and enriching development of our forest and range resources.

I remain,

Yours truly,

A handwritten signature in dark ink, reading "P.C. Trussell." The signature is written in a cursive style with a large, looped initial "P" and a distinct "C" before the surname.

P.C. Trussell  
Chairman  
Forest Research  
Council

# FOREST RESEARCH COUNCIL OF BRITISH COLUMBIA

## FIRST ANNUAL REPORT for the year ending March 31, 1982

Secretariat on Forestry  
Research and Development

Address: #305 - 7671 Alderbridge Way  
Richmond, B.C. V6X 1Z9

Telephone: (604) 273-6548



P.C. TRUSSELL



J.E. BROWNE



E.T. OSBORN



T. SIMMONS Ph.D.



K.G. BOYD



A.C. MacPHERSON



A.B. ROBINSON



R.M. STRANG, Ph.D.

## FOREST RESEARCH COUNCIL OF B.C.

| Membership                                                                                                                 | Date of Appointment | Term       |
|----------------------------------------------------------------------------------------------------------------------------|---------------------|------------|
| P. C. Trussell, Ph.D., Chairman                                                                                            | Feb. 1981           | Indefinite |
| K. G. Boyd<br>V.-P. Pacific Forest Products Ltd.<br>Victoria, B.C.                                                         | June 1981           | 3 yrs.     |
| J. E. Browne<br>Chief Forester, Finlay Forest Products<br>Mackenzie, B.C.                                                  | June 1981           | 1 yr.      |
| A. C. MacPherson<br>Assit. Deputy Minister<br>Ministry of Forests<br>Timber, Range & Recreation Division<br>Victoria, B.C. | June 1981           | 3 yrs.     |
| E. T. Osborn<br>Manager, Coldstream Ranch<br>Vernon, B.C.                                                                  | June 1981           | 2 yrs.     |
| A. B. Robinson<br>Regional Manager<br>Ministry of Forests<br>Kamloops, B.C.                                                | June 1981           | 2 yrs.     |
| T. A. Simmons, Ph.D.<br>Resource geographer<br>Vancouver                                                                   | June 1981           | 1 yr.      |

## SECRETARIAT ON FORESTRY RESEARCH & DEVELOPMENT

|                     |                                                 |
|---------------------|-------------------------------------------------|
| R. M. Strang, Ph.D. | Executive Director and Secretary to the Council |
| M. L. Wallis        | Secretary/Office Manager                        |

|                                           |   |
|-------------------------------------------|---|
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The economic well-being of all Canadians is directly related to forestry. Forestry accounts for more national income than agriculture, fishing, mining and petroleum resources combined, and, in British Columbia, is responsible for half the Provincial product. The recent downturn in the market for forest products has sharply demonstrated the dependence of our economy on forestry.

Serious as the present adverse market is for forestry, more critical in the longer term is the fundamental stability of the forest industry itself. Unlike its companion industry, agriculture, which has received continuing research input and support for decades, the research support for forestry as a **productive crop** has been grossly inadequate. Those cultural practices that have been developed through research for agriculture, such as crop breeding, soil and site selection for species, fertilization, protection against insects and disease, mechanization of harvesting and maximum utilization are only in their infancy in silviculture and must be speedily developed. This will require time, money and trained personnel.

Our terms of reference embrace forests not only as a crop yielding wood and other cellulose products, but also as rangeland for livestock, as a stabilizer for our land surfaces and our water supplies, as a habitat for wildlife and as recreational areas for our people.

## PREAMBLE

In fulfilling our commitment we shall call on and hope to receive the support of Provincial and Federal Government Forestry Services, manufacturers, consultants, research organizations and educational institutions — all have an intrinsic contribution to make to this common benefit, and all have much to gain also.

## INTRODUCTION

The Forest Research Council of B.C. and its Secretariat on Forestry Research and Development were formed under the authority of the Minister of Forests Act (1 January, 1979) to "... advise him (the Minister) with respect to any matter included in his duties, powers and functions . . .". This mandate was amplified in the Ministry's 1980 "Blueprint for Action" as being "... to co-ordinate all forest research in the Province and sponsor contracts or grants for research and forestry education".

Following promulgation of the Act, a Task Force chaired by G. L. Ainscough, Chief Forester of MacMillan Bloedel Ltd., invited and reviewed opinions and suggestions from the forestry community on the nature, functions and role of the Council. The Task Force Report has provided most useful guidelines for Council during this formative phase.

## ACTIVITIES

The first year has been one of developing goals, direction and *modus operandi*.

Council convened five times during the year. After an inaugural meeting in Victoria in June, it alternated meetings between its Richmond headquarters and forestry centres in the Province — Vernon in November, 1981 and Prince George in February, 1982. Council intends to continue this practice of holding every second meeting in a forestry community so as to foster liaison and the exchange of ideas and information between Councillors and forestry practitioners and researchers.

Proposals have been invited for a search, review and interpretation of literature pertaining to the management and silviculture of lodgepole pine (*Pinus contorta* var. *latifolia*) applicable to the B.C. interior. Reid, Collins Nurseries Limited of Aldergrove was the successful bidder. The report, a "state-of-the-art" review, will shortly be ready for distribution.

It is of note that the Deputy Minister has stated unequivocally that Council is "... at arm's length from the Ministry". Nevertheless, Council maintains close liaison with the Ministry, and especially its Research Branch. The Secretariat depends upon the Ministry for financing and logistic support, and would be remiss if it failed to acknowledge the generous help and advice which has been readily available, especially from the Financial Services Branch.

Terms of Reference have been developed under the general Objective "to improve the efficiency of management and productivity of the forest and range resources of the Province by stimulating and co-ordinating research into all aspects of management of the total forest estate".

Ten functions are defined within this overall objective.

They are:

1. consider all matters brought to its attention by the Minister and, where required, report its findings to him;
2. advise the Minister on implementation of forest and range research policy;
3. from time to time, establish priorities for research in all matters relating to forest and range management, and advise the Minister accordingly;
4. review and report annually on forest and range research activities in the Province;
5. gather, collate and disseminate information on current forest and range research relevant to the Province;
6. establish and maintain a roster of forest and range researchers in the Province and adjacent areas;
7. ensure that research results and findings are made available to forest and range practitioners in the Province;
8. establish and maintain liaison amongst the Ministry, the Council, forest and range practitioners and researchers;
9. evaluate and comment on research and development proposals submitted to it through its Secretariat, and make recommendations to government on funding these proposals; and
10. maintain a small, permanent Secretariat.

It should be noted that "forest and range management" and "forest estate" include all activities in and products or benefits derived from forested and range land and that "forest and range research" explicitly includes economic analysis, basic research, applied research, and operational trials and development to ensure maximum and timely application of research results.

## TERMS OF REFERENCE

Priorities and research needs are decided by Council on the basis of input directly from the forestry community, both private and public, following extensive canvassing by Councillors.

Initial discussions in 1981-82 led to the identification of seven generalized topics or fields of interest which were of most immediate concern to the forestry community as a whole.

- Silviculture — management and silviculture of lodgepole pine in B.C.'s interior:  
— the use of chemicals in forestry; their effects and breakdown products:  
— development of improved criteria for selecting plus trees, with special reference to wood quality:  
— development of an 'early warning' system to give advance indication of an incipient attack by insects, especially bark beetles.
- Range & Wildlife — determination of tree x grass interactions; particularly in seeded clearcuts:  
— determination of changes in animal populations and animal behaviour consequent upon alterations to their habitat.
- Products — examination of the applicability of existing log and lumber grade standards to 'new' i.e. relatively fast-grown, young wood.

## RESEARCH PRIORITIES AND PROJECTS

In response to an invitation to submit research proposals in these general areas, 54 proposals were received, with a first year cost of \$2,497,966. Four additional late proposals were not accepted. This is some indication of the number of questions in forestry-related research which await an answer, and of the research capability not fully utilized.

# SUMMARY OF RESEARCH PROPOSAL APPLICATIONS

|                                               |             | Number | Dollars     |
|-----------------------------------------------|-------------|--------|-------------|
| Silviculture                                  |             |        |             |
| Lodgepole Pine                                |             | 13     | \$ 710,663  |
| Other                                         |             | 20     | 944,894     |
| Genetics & Tree Breeding                      | 5           |        |             |
| Seedling Management                           | 3           |        |             |
| Stand Tending                                 | 5           |        |             |
| Weeding                                       | 2           |        |             |
| Fertilizing                                   | 3           |        |             |
| Protection                                    | 5           |        |             |
| v insects                                     | 4           |        |             |
| v disease                                     | 1           |        |             |
| Miscellaneous                                 | 2           |        |             |
|                                               | Sub Total   | 33     | 1,655,557   |
| *Rangeland Resources, Wildlife & Recreation** |             | 8      | 236,648     |
| Harvesting                                    |             |        |             |
| ***Products                                   |             | 13     | 605,761     |
|                                               | Grand Total | 54     | \$2,497,966 |

\*3 additional late proposals not accepted

\*\*no proposals received in the Recreation area

\*\*\*1 additional late proposal not accepted

Sector Committees are dealing with the four fields:

Silviculture - all aspects of tree-growing

Rangeland Resources, Wildlife & Recreation - the non-timber resources

Harvesting - liaising closely with Forest Engineering Research Institute of Canada

Products - liaising closely with FORINTEK Canada Corporation.

Recommendations for funding will be made by the Sector Committees for final evaluation by Council on 1st April, 1982, and successful candidates advised soon thereafter.

## SECRETARIAT

The Secretariat has compiled and will maintain an inventory of active forest research projects in the Province which will be available on request. This inventory shows the title of each project, its objectives, location, and a contact address for the principal researchers.

It has also assembled a Provincial listing of organizations having a forestry research capability. This too is open for inspection.

Many liaison visits have been made by Dr. Roy Strang, the Executive Director, to forestry research institutions and establishments, universities, forestry practitioners and to interest groups. He was always received with courtesy and enthusiasm. The interest shown in Council emphasizes the need for its coordinating role, and the cooperation and assistance offered augur well for the future.

Temporary quarters were used from September, 1981; the Secretariat will move into a permanent location alongside Science Council of B.C. in April, 1982.



# **FOREST RESEARCH COUNCIL OF BRITISH COLUMBIA**

## **SECOND ANNUAL REPORT**

for the year ending March 31, 1983

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1982-83  
C.5

**FOREST RESEARCH COUNCIL  
OF BRITISH COLUMBIA**

**SECOND ANNUAL REPORT,  
for the year ending March 31, 1983**

**SECRETARIAT ON FORESTRY  
RESEARCH AND DEVELOPMENT**

**Address: #305 - 7671 Alderbridge Way  
Richmond, B.C. V6X 1Z9**

**Telephone: (604)273-6548**



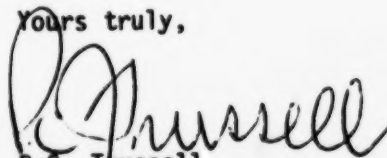
The Honorable T.M. Waterland  
Minister of Forests  
Parliament Buildings  
Victoria, B.C. V8V 1X4

Dear Sir:

It is my pleasant duty to submit  
herewith the second Annual Report of the  
Forest Research Council of British Columbia,  
for the year ending 31 March 1983.

I remain,

Yours truly,

A handwritten signature in dark ink, appearing to read 'P.C. Trussell', written in a cursive style.

P.C. Trussell  
Chairman  
Forest Research Council



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| <u>MEMBERSHIP</u>                                                                                                          | DATE OF<br>APPOINTMENT | TERM       |
|----------------------------------------------------------------------------------------------------------------------------|------------------------|------------|
| P.C. Trussell, Chairman                                                                                                    | Feb. 81                | Indefinite |
| K.G. Boyd<br>Vice-President<br>Pacific Forest Products Ltd.<br>Victoria, B.C.                                              | June 1981              | 3 yrs.     |
| V.C. Brink,<br>Professor Emeritus, Dept. of Plant<br>Science, U.B.C., Vancouver, B.C.                                      | June 1982              | 3 yrs.     |
| A.C. MacPherson<br>Assistant Deputy Minister<br>Ministry of Forests<br>Timber, Range and Recreation Div.<br>Victoria, B.C. | June 1981              | 3 yrs.     |
| E.T. Osborn<br>Manager, Coldstream Ranch<br>Vernon, B.C.                                                                   | June 1981              | 2 yrs.     |
| A.B. Robinson<br>Regional Manager<br>Ministry of Forests<br>Kamloops, B.C.                                                 | June 1981              | 2 yrs.     |
| J.A. Sigalet<br>Parta Industries<br>Grand Forks, B.C.                                                                      | June 1982              | 3 yrs.     |
| appointed by Council (3 vacancies)                                                                                         |                        |            |
| P.H. Pearce,<br>Professor, Faculty of Forestry<br>University of British Columbia<br>Vancouver, B.C.                        | Oct. 1982              | 3 yrs.     |

R.M. Strang

Executive Director and Secretary to  
the Council

M.L. Wallis

Secretary/Office Manager

Mr. J.E. Browne and Dr. T.A. Simmons stepped down from Council after the inaugural year and were succeeded by Mr. J.A. Sigalet and Dr. V.C. Brink, representing the interior woods industries and the recreation/wildlife communities respectively.

The helpful contributions by Mr. Browne and Dr. Simmons are gratefully acknowledged.

Dr. P.H. Pearse was appointed by Council to bring an economics dimension to its deliberations.

## **PREAMBLE**

In common with all other forestry enterprises the Council struggled through difficult times in 1982/83, and was not enabled to fund any forestry research.

Although failure to initiate research funding by the Council during the present economic slump is understandable, the inadequacy of forest management and forest research funding in Canada in general and in B.C. in particular, must be stressed. In 1979-80 total expenditures on forestry research in B.C., which included almost \$5 million through the federal Canadian Forestry Service, amounted to only 0.31% of the value of forest products shipped. Nationally, expenditures were 0.7% of forest product sales.

## **INTRODUCTION**

The Forest Research Council of B.C. and its Secretariat on Forestry Research and Development were formed under the authority of the Minister of Forests Act (1 January, 1979) to "... advise him (the Minister) with respect to any matter included in his duties, powers and functions ...". This mandate was amplified in the Ministry's 1980 "Blueprint for Action" as being "... to co-ordinate all forest research in the Province and sponsor contracts or grants for research and forestry education".

Having identified seven areas of research priority and anticipating receipt of research monies for 1982-83, Council invited proposals in these seven areas and received 58 proposals with a first-year cost approaching \$2,500,000. To everyone's regret no funds were allocated and consequently no research could be supported.

## ACTIVITIES

### Regular Meetings of Council

Six regular Council meetings were held; three in Richmond, one in Nanaimo and its environs, one in Kelowna with the Interior Lumber Manufacturers' Association and one in Victoria with the Chief Forester's field forestry group.

### Meeting of Forest Research Performers

In December, Council convened a meeting of agencies carrying on or financing forestry-related research in the Province. Twenty agencies were represented.

Each representative gave a statement of his agency's mandate, and an outline of the activities being carried on to meet that mandate.

Seventeen agencies reported budgets totalling \$29,990,000. Adding estimates for the remaining three agencies, expenditures on forestry-related topics amounted to some \$40,000,000, which includes federal contributions. In 1981 B.C. shipped wood-based products worth \$7,000,000,000 and exported almost \$5,000,000,000 worth.

A summary of the meeting appears in Appendix 1.

MANAGERS AND USERS OF BRITISH  
COLUMBIAS FOREST ESTATE:  
THEIR GOALS AND OBSTACLES

To assist in the identification of research needs in forest management, user agencies in B.C. were invited to set out their goals and objectives, and the obstacles impeding achievement of those goals.

The responses are summarised in Appendix 2 in two groups - the managers of the forest estate, and the harvesters and other users. Being by far the most significant land manager, the Ministry of Forests (B.C.F.S.) appears first and is quoted at some length. Similarly the Council of Forest Industries (COFI) takes pride of place amongst the users.

Extensive canvassing of representatives of user groups and management agencies elicited summaries of their goals and objectives, and of the obstacles or impediments to achievement of those goals. These barriers point to areas of needed research, although some are operational or policy problems rather than subjects for investigation.

No attempt has been made to prioritize the obstacles to achieving the goals presented by the forest users. The goals and obstacles are essentially the viewpoints of the respondents.

We are very grateful to our respondents who, obviously, took great care to provide thoughtful and informative submissions.

Senior executives of thirteen major forestry companies were interviewed. Quite apart from immediate business concerns, there was a fair measure of agreement in the views expressed.

High on the list of needed studies was long-term economic planning, although the precise focus varied. Other topics lacking adequate information are:

- economics of intensive forestry;
- economics of operating on high cost/low yield coastal sites;
- economics of multiple use;
- accurate site-specific definition of the 'marginal' log;
- improved protection against insects and fire.

### INVENTORY OF FOREST RESEARCH

An inventory of active research projects has been completed and is now in press. It will shortly be available.

A sample page follows.

| CODE #  | Spp.               | PROJECT TITLE                                                                                                           | LOCATION                      | PRINCIPAL RESEARCHER                                       | OBJECTIVE                                                                                                |
|---------|--------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| 1.6.0.0 |                    | EFFECTS OF HARVESTING AND SITE PREPARATION PRACTICES ON FOREST RESOURCES (PC-25) INCLUDES: 2 STUDIES (see also 1.3.1.2) | Queen Charlotte Islands       | Can. Forestry Service:<br>FERC<br>- R.B. Smith             | To Identify, elucidate and measure the effects of harvesting and site preparation on forest resources    |
| 1.6.1.1 |                    | IMPROVED CHAIN SAWS FOR FELLING HEADS                                                                                   | Vancouver                     | FORINTEK<br>- T.A. McLauchlan                              | Improved chain saws for use as felling heads, which have greater cutting rates and improved service.     |
| 1.6.1.3 |                    | CARNATION CREEK EXPERIMENTAL WATERSHED PROJECT                                                                          | Carnation Creek               | Fish. & Oceans/CFS: FERC<br>- G. Hartman/R.B. Smith        | Effects of forestry practices on fish habitat; changes in hydrology; soil erosion and forest growth      |
| 1.6.1.3 |                    | EFFECTS OF HARVESTING AND SITE PREPARATION PRACTICES ON FOREST RESOURCES AND VALUES (PC-25)                             | Okanagan,<br>Vancouver Island | FERC<br>- R.B. Smith                                       | To Identify, measure and elucidate the effects of harvesting and site preparation practices on resources |
| 1.6.2.1 |                    | REGULATION OF PARTIALLY-CUT STANDS                                                                                      | Vancouver                     | UBC - Forestry<br>- J.H.G. Smith                           | By case studies of past cutting to improve regulation and control of partial cutting                     |
| 1.6.2.2 | C, H, L,<br>Fd, Pw | PARTIAL CUTTING STUDY IN THE COLUMBIA FOREST ZONE (E.P. 370)                                                            | Frosthall Creek<br>T.F.L. 23  | Ministry of Forests<br>Nelson Res. Sec.<br>- C.F. Thompson | To Investigate the response of a mixed immature stand after three intensities of partial cutting         |
| 1.7.0.0 |                    | QUEEN CHARLOTTE ISLANDS STUDY (4.1)                                                                                     | Queen Charlotte Islands       | FERC<br>- M. Nagy<br>E.A. Sauder                           | A study of ways to reduce the mass wasting from logging                                                  |
| 1.7.0.0 |                    | YARDING STUDIES (6.0)                                                                                                   | Vancouver                     | FERC<br>- E.A. Sauder                                      | To Improve the efficiency of yarding                                                                     |
| 1.7.0.0 |                    | ALTERNATE YARDING SYSTEMS                                                                                               | Queen Charlotte Islands       | Poulin & Associates                                        | Addressing the effect of logging on unstable slopes                                                      |
| 1.7.1.0 |                    | CARNATION CREEK EXPERIMENTAL WATERSHED PROJECT (see also 1.6.1.3)                                                       | Carnation Creek               | Fish. & Oceans/CFS: FERC<br>- G. Hartman/R.B. Smith        | Effects of forestry practices on fish habitat; changes in hydrology; soil erosion and forest growth      |

## MULTIPLE USE OF FOREST LANDS

In an internal discussion paper, the Council examined the problem of "Multiple-use of land designated to forestry".

Defining multiple-use as "simultaneous or sequential use of a tract of land for two or more purposes ... while maintaining environmental integrity", Council recognized that the problem may be narrowed down to the question "... how can one arrive at a logical and rational choice amongst several options?"

There are perhaps six obstacles in B.C.:

- an inadequate data base, especially that pertaining to interactions and reactions;
- institutional barriers, with some legislation having a single-use focus;
- single-use thinking in the traditionally minded;
- complex administrative procedures;
- absence of rigorous decision-making criteria;
- a public which tends to take a simplistic, short-term view of complex issues.

Council's role should be to stimulate:

- i. inter-disciplinary team studies into plant and animal community responses to man-induced perturbations of natural systems; and
- ii. development of objective decision-making criteria and methodologies which are flexible, comprehensive and expeditious.

#### LODGEPOLE PINE REVIEW

A review of literature pertaining to the silviculture and management of lodgepole pine was commissioned.

This has now been published as Occasional Paper #1 and is available on request.

#### MINISTERS' TASK FORCE ON FORESTRY EDUCATION NEEDS TO 2000 A.D.

The Council's Chairman, Dr. P.C. Trussell, was appointed to chair this Task Force and the Secretariat provided necessary secretarial support. The Task Force was charged by the Ministers of Forests, and of Science, Universities and Communications with estimating the numbers and kinds of trained personnel who will be needed in forestry until the end of this century, and the necessary staff and facilities to handle the training.

Representatives from Ministries of Forests and of Environment, of the industry (C.O.F.I.), professionals (A.B.C.P.F.), technologists (S.E.T.), universities and colleges met frequently. An interim report was submitted in December 1982 and a final report is nearing completion.

## **SECRETARIAT**

The Secretariat moved into permanent accommodation in April 1982 alongside B.C. Science Council's Secretariat thus fostering communication and liaison.

The Executive Director attended regular meetings of the Coastal and Interior Tree Improvement Councils; Annual Research Advisory Committee meetings in Vancouver, Cariboo and Prince Rupert Regions; spoke to Cariboo, Okanagan, Pacific, Vancouver Island and Vancouver Sections of the Canadian Institute of Forestry on the work of Council, and addressed several public interest groups and Service Clubs.

FOREST RESEARCH COUNCIL  
Financial Statement 1982-83

Expenditures

|                                  |               |                  |
|----------------------------------|---------------|------------------|
| Salaries and benefits            |               | \$ 61,123        |
| Professional Services            |               |                  |
| Special Services                 | 942           |                  |
| Fees and Allowances              | <u>12,786</u> | 13,728           |
| Office Expenses                  |               |                  |
| General supplies                 | 4,574         |                  |
| Books and printed materials      | 611           |                  |
| General expenses                 | <u>3,160</u>  | 8,345            |
| Travel Expenses                  |               |                  |
| Secretariat                      | 10,668        |                  |
| Council members                  | <u>3,358</u>  | 14,026           |
| Printing - Lodgepole Pine Review |               | 3,008            |
| Office Rental                    |               | <u>16,197</u>    |
|                                  |               | <u>\$116,427</u> |

**APPENDIX NO. 1**

**FORESTRY-RELATED RESEARCH ORGANIZATIONS**  
**IN BRITISH COLUMBIA**

**Their mandates and activities**

## ORGANIZATION & REPRESENTATIVE

### Agriculture Canada

3015 Ord Road

Kamloops, B.C.

V2B 8A9

- Dr. J.D. McElgunn,  
Director, Research Station

Satellite station at Prince George

- for north-central B.C.

## ACTIVITIES

Professional Staff - Director + 9, Annual Budget \$1,700,000

2 program objectives - Forage Crops

- Beef Cattle

- Forage crops - establishment, growth & overwintering.
- Soil/plant relationships, fertilizers & remote sensing.
- Quality & toxicities of forages.
- Deer x cattle interactions.
- Range classifications & management.

### MANDATE

To conduct agricultural R&D for Interior B.C.  
with emphasis on the beef cattle industry.

---

### B.C. Ministry of Environment

Surveys & Resource Mapping Branch

777 Broughton Street

Victoria, B.C. V8V 1X5

- Mr. P.N. Sprout, Manager  
Terrestrial Studies

Staff - 60 approx. Annual budget - \$2,000,000

Activities dealing directly with forestry include:

- Broad scale inventories of terrain, soils and vegetation;
- Wildlife censuses;
- Wildlife population and habitat studies for strategic planning;
- Aquatic Studies Br. assembles fish and hydrologic data.

### MANDATE

From Section 2 of the Environment Management Act, 1980, the Ministry's duties include:

- a) planning, research and investigation with respect to the environment;
- b) development of policies for the management protection and use of the environment;
- c) planning, design, construction, operation - and maintenance of works and undertakings for the management, protection and enhancement of the environment;
- d) provision of information to the public with respect to the quality and use of the environment;
- e) preparation of publication of policies, strategies, objectives and standards for the protection and management of the environment.
- f) preparation and publication of environmental management plans for specific areas of the Province which may include, but need not be limited to, measures with respect to the following:
  - i) flood control;
  - ii) drainage;
  - iii) soil conservation;
  - iv) water resource management;
  - v) fisheries and aquatic life management;
  - vi) wildlife management;
  - vii) waste management;
  - viii) air management.

## ORGANIZATION & REPRESENTATIVE

## ACTIVITIES

### B.C. Ministry of Environment

Fish & Wildlife Branch

Parliament Buildings

Victoria, B.C. V8V 1X5

- Dr. D.S. Eastman

1/c Wildlife Research

Staff - 3, Annual Budget \$370,000.

- Habitat studies and impact of human activities on grizzly bears, moose, elk, goats, caribou, deer and sheep.
- Wolf predation on caribou, deer and sheep.
- Census methods.

### MANDATE

Wildlife Research Section is responsible for conducting, co-ordinating and evaluating research that is consistent with Branch goals (q.v.); and ensuring that research is directed towards achieving objectives of the wildlife and habitat management programs

Branch goals are:

1. To maintain the diversity of species representative of the major biophysical zones of the Province;
2. To ensure that, within the constraints of land capability and biological limits of each species, wildlife is available in sufficient abundance to meet the recreational and economic needs of society.

In co-operation with Research Branch, BCFS:

- Integrated wildlife/intensive forestry research;
- mule deer x Interior Douglas-fir management;
- caribou x forestry;
- grizzly bears x coastal forestry;
- wildlife habitat handbook.

### B.C. Ministry of Forests

Silviculture Branch

39 Bastion Square

Victoria, B.C. V8W 1J1

- Mr. C.M. Johnson

Director

SX trials \$200,000

SX trials are operational or pilot project scale field tests of research findings.

- |                      |             |
|----------------------|-------------|
| - Cones & seeds      | - 22 trials |
| - Seed orchards      | - 10 trials |
| - Site preparation   | - 28 trials |
| - Nurseries          | - 84 trials |
| - Planting           | - 69 trials |
| - Brushing & Weeding | - 5 trials  |
| - Tending            | - 30 trials |

### MANDATE

While the Branch has a largely operational function it also has a role in ensuring liaison between research and practice.

## ORGANIZATION & REPRESENTATIVE

### B.C. Ministry of Forests

#### Research Branch

1450 Government Street  
Victoria, B.C. V8W 3E7  
- Dr. J. Dangerfield,  
Director

#### MANDATE

The Branch is responsible for the direction and co-ordination of the Ministry's research program and for ensuring that it is both efficient and effective in supporting achievement of the Ministry's goals (q.v.).

## ACTIVITIES

Staff - approx. 210, Annual Budget - \$8,600,000 (82/83) approx.

The Branch receives, reviews and sets priorities on research requests, identifies research opportunities and needs and maintains scientific standards for in-house, contract research and Section 88 research

There are 5 sections at Headquarters:

- |                          |                                                  |
|--------------------------|--------------------------------------------------|
| Biometrics               | - a service unit                                 |
| Tree-physiology          | - seed physiology research                       |
|                          | - tree improvement physiology                    |
|                          | - nursery and stand establishment technology     |
|                          | - analytical services                            |
| Tree improvement         | - variability studies                            |
|                          | - genetics research                              |
|                          | - breeding programs                              |
| Ecology & earth sciences | - ecology & soils                                |
|                          | - range program                                  |
|                          | - hydrology & climatology program                |
|                          | - wildlife program (with Fish & Wildlife Branch) |
|                          | - fish/forest interactions                       |
| Silviculture             | - growth & yield analyses                        |
|                          | - site protection and rehabilitation             |
|                          | - stand establishment, protection, tending       |
|                          | - fertilizing and reforestation                  |

There is a Regional Research Program in each Forest Region and a Provincial Research Advisory Committee.

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### B.C. Research

3650 Westbrook Mall  
Vancouver, B.C. V6S 2L2  
- Dr. V.A. Mode  
Executive Director

#### MANDATE

A non-profit, independent agency doing applied industrial problem-solving investigations.

Staff - 135, Annual Budget approx. \$1,000,000 for forestry-related projects.

It is an applied science laboratory with expertise in biology, chemistry, engineering, industrial health, operational science and physics.

The forestry-related program includes studies in:

- |                                             |      |
|---------------------------------------------|------|
| - Health & hygiene in wood-using industries | - 15 |
| - Wood chemistry                            | - 5  |
| - Remote sensing and land classification    | - 4  |
| - Biomass studies, including gasification   | - 4  |
| - Others                                    | - 4  |
-

## ORGANIZATION & REPRESENTATIVE

Canadian Forestry Service, Environment Canada  
Pacific Forest Research Centre  
506 West Burnside Road  
Victoria, B.C. V8Z 8M5  
- Mr. D.R. Macdonald  
Director

### MANDATE

The role of the Canadian Forestry Service is to encourage improved resource management and the growth of the forest industry and, through research and development, to provide scientific and technical leadership in forestry.

The Pacific Forest Research Centre responds to regional needs within the broader context, maintains close liaison with the B.C.F.S. and participates in national programs.

## ACTIVITIES

Staff - 70 professionals, 164 total; \$5,800,000 current annual budget.

There are 4 main areas of activity

### Environment Forestry - Research and Services

- Forest insect and disease survey
- Effects of harvesting and site preparation practices
- Fire research
- Environmental assessment
- Meteorology in forestry
- Carnation Creek experimental watershed
- Damage appraisal and remote sensing

### Forest Resources - Research and Services

- Coastal Douglas-fir ecosystems and stand tending
- Forestry resource data
- Regeneration and silviculture systems
- Tree and seed improvement
- Forest land productivity
- Fate of nitrogenous fertilizer applied on snow
- Supporting services

### Forest Protection - Research and Services

- Bark and wood-boring insects
- Defoliating insects
- Root and stem diseases
- Pest management systems
- Protection of seeds, cones and seedlings
- Biological control
- Chemicals and the forest ecosystem
- Plant lipids as control agents
- Supporting services

### Forestry Development and Relations

- Develop, negotiate and implement forestry agreements with the Province and industry for intensive forest management programs
- Development of economic guidelines and socio-economic analysis
- Administration of federal job creation programs in forestry (EBAP)

There is also a small Information Services group.

## ORGANIZATION & REPRESENTATIVE

Canadian Wildlife Service, Environment Canada  
Research and Interpretation Branch  
P.O. Box 340  
Delta, B.C. V4K 3Y6  
- Mr. S. Wetmore  
Research Biologist

### MANDATE

The Service's mandate derives from the Migratory Birds Protection Act (1917) and the Canadian Wildlife Act (1973) which call for protection and wise use of the migratory bird resource.

## ACTIVITIES

Staff - 1.5, Annual budget \$20,000 for forestry-related programmes.

Four areas of investigation have been opened up:

- prediction of effects of harvesting and regeneration operations on forest bird populations, indicator species;
- mitigation of identified adverse effects of woods operations;
- identification and evaluation of untended stands as bird refugia;
- birds as agents for controlling insect pests. (In this connection it is worthy to note that in Washington State bird predation on harmful insects was worth \$4,000/mi<sup>2</sup> in lieu of spraying.)

Council of Forest Industries of B.C.  
Research and Development Laboratory  
735 West 15th Street  
North Vancouver, B.C. V7M 1T2  
- Dr. C.K.A. Stieda  
Manager

### MANDATE

The laboratory carries out product development and testing for the Council; and generates data and specifications for C.O.F.I.'s technical literature and for national Building Codes in Canada and Europe.

Staff- 6, Annual Budget \$319,000

Four topics are currently being pursued:

- mechanical strength properties of plywoods;
- evaluation of plywood building components;
- building codes;
- lumber standards.

Department of Fisheries & Oceans  
(Salmon Habitat Section)  
Pacific Region  
1090 West Pender Street  
Vancouver, B.C. V6E 2P1  
- Dr. I. Birtwell  
Head, Salmon Habitat Section  
Fisheries Research Branch  
West Vancouver Laboratory

### MANDATE

The new Constitution allocates jurisdiction over inland and sea coast fisheries to the Government of Canada which uses the Fisheries Act to implement its responsibilities.

Fisheries Research Branch is the principal research group.

Staff - 10, Annual Budget \$700,000 for forestry-related research

Most forestry-related research is done by the Salmon Habitat Section, and is multi-disciplinary.

Work falls into 3 areas:

- toxicology & pollution;
- watershed ecology (Carnation Creek)
- coastal marine environments and estuaries

## ORGANIZATION & REPRESENTATIVE

### Forest Engineering Research Institute of Canada (West)

2112 West Broadway  
Vancouver, B.C. V6K 2C8  
- Mr. V. Wellburn  
Manager

#### MANDATE

FERIC is a non-profit Institute concerned with R&D in forest mechanization - harvesting, road-building and silviculture

## ACTIVITIES

Staff - 21, Annual Budget approximately \$1,000,000.

Most of FERIC's work is co-operative, with the Institute being responsible for planning, data collection and processing and reporting.

Current areas of study include:

- machine and logging system evaluations;
- road construction techniques, with a handbook on forest road bridges; and a drilling and blasting handbook is in preparation;
- mechanization of felling;
- improved trucking efficiencies;
- mountain logging, with inputs to I.U.F.R.O. and a contribution to the Cyclocrane project;
- water transport of logs.

FERIC is also involved in 2 multi-disciplinary projects;

- steep-slope logging in the Kootenays;
- Q.C.I. fish/forestry interaction study.

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### FORINTEK Canada Corp.

Western Laboratory  
6620 N.W. Marine Drive  
Vancouver, B.C. V6T 1X2  
- Dr. M.R. Clarke, Assoc. Director  
(for Dr.C.C. Walden, Director)

Staff - 99, Annual Budget approximately \$4,500,000.

The six areas of activity are:

- lumber manufacturing technology
- wood composites
- wood preservation
- codes and standards
- resource utilization
- technology transfer

There is also an eastern laboratory.

#### MANDATE

FORINTEK is a non-profit research organization undertaking basic and applied research in wood products on behalf of the Canadian forest products industry.

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### MacMillan Bloedel Research, Vancouver

- Dr. P.L. Cottell  
Director, Wood Harvesting Research  
3350 East Broadway  
Vancouver, B.C. V5M 4E6  
(for Dr. O.L. Forgacs  
Senior V.P., R&D)

Staff - 112.

Some 70 R&D projects cover:

- Pulp & Paper
  - thermo-mechanical pulping;
  - western red cedar pulp;
  - brightening of pulp from west coast spp.
- Wood Products
  - wafer & other reconstituted boards
- Technical Services
  - analyses; materials and corrosion
- Wood Harvesting
  - economic log recovery
  - water transport
  - new systems

In addition to the R&D Department, Woodland Services Division, Landuse Planning Advisory Team

provides a multi-disciplinary resource base of:

- integrated research data to maximize wood fibre yields;
- growth and yield data;
- training and advisory services to field staff.

#### MANDATE

The task of this unit is, through applied research, to:

- maintain and improve the Company's competitive position;
- lessen adverse environmental consequences of harvesting operations;
- improve safety and energy conservation;
- provide technical support to harvesting and log transport operations; solid wood, pulp and paper products and packaging.

## ORGANIZATION & REPRESENTATIVE

### Pulp & Paper Research Institute of Canada

6620 N.W. Marine Drive

Vancouver, B.C. V6T 1X2

- Dr. J.V. Hatton, Officer-In-Charge

The major office and laboratory facility is at Pointe Claire, P.Q.

### MANDATE

The Institute's main purpose is to supplement and complement the technical investigations of individual member firms. It provides basic research data and improved technology to help improve their competitive position in world markets.

It conducts fundamental studies and also carries major industrial developments forward from inception to commercialization.

### Science Council of B.C.

301 - 7671 Alderbridge Way

Richmond, B.C. V6X 1Z9

- Mr. R.W. Keyes

Chairman

### MANDATE

Established by legislation in June 1978 the Council is required to:

- advise the Provincial Government on Science Policy;
- award grants to researchers in science and technology in B.C. industry, universities, and other institutions;
- encourage and participate in exhibits and programs to help explain science and scientific research to students and the general public;
- maintain contact with other scientific organizations.

## ACTIVITIES

Staff - 7 (western component only)

Major general areas of study are:

- Improving productivity;
- Improving process control;
- anti-corrosion measures in processing plants;
- economic fibre supply;
- product development;
- energy conservation and non-renewable resources
- environmental amelioration
- strategic basic research

The major thrust in the western laboratory is pulp utilization of dead timber.

PPRIC maintains a comprehensive library.

Staff - Chairman & 14 Councillors & Secretariat,  
Annual Budget approx. \$5,000,000

Forests & Forest Products - \$1,700,000 awarded 1982-83

- pheromones v. forest insect pests;
- microbiological conversion of pulp and paper wastes to usable protein;
- bleaching of cedar pulp;
- improved chain saw design;
- nutrition and growth of interior tree species.

## ORGANIZATION & REPRESENTATIVE

### Simon Fraser University

Burnaby, B.C. V5A 1S6

- Dr. J.M. Webster

Assoc. Vice-President, Academic

### MANDATE

To conduct research and teach in programs that best serve the educational specialist and industrial needs of B.C. and Canada.

## ACTIVITIES

Staff - 30, in 6 Departments, Research Grant 1983 \$388,000.

### Forestry Resource and Forest Stand Management:

- forest soils, hydrology, plant-soil relationships, tree physiology;
- forest succession, forest ecology, silviculture, principles governing resource management;
- pest management (a major contribution), forest entomology, pesticide evaluation and application, pesticide residues in soil and water systems, integrated pest management (including biological and chemical methods);
- forest management (an area of emphasis) in relation to multiple use management, wildlife, recreation and public interest.

### Forest Products Management and Marketing:

- harvesting strategies in relation to rotation; harvesting rights, compensation and expropriation policies, production capacity and levels of vertical integration;
- pest controls in stored lumber and in transit;
- manpower management, labour stability in forestry industry, manpower forecasting, industrial productivity;
- corporate strategies, impact of forest-based industries on provincial scene;
- industrial marketing especially lumber, demand estimations, inventory demand for complementary products, transport and distribution problems, various aspects of management science relating to forestry; international finance.

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### University of British Columbia

Faculty of Forestry

Vancouver, B.C. V6T 1W5

- Dr. G.F. Weetman, Research Co-ordinator

### MANDATE

Education and the advancement of knowledge; research, in forestry and wood-science, is problem-oriented and thus requires an awareness of operational problems.

### Areas of expertise and numbers of Faculty:

- ecology, nutrient cycling, FORCYTE (3)
- economics (2)
- engineering and harvesting (3)
- entomology (2)
- fire management and use (1)
- fish x forestry interactions (1)
- genetics and tree seeds (2)
- mensuration, inventory and biometry (3)
- operations research, optimization techniques (2)
- pathology (1)
- photo-interpretation and remote sensing (2)

Staff - approx. 40 in 3 Departments,

viz. Forest Sciences;

Forest Resource Management;

Wood Science & Harvesting.

Research Grants

1982 \$1,300,000

The research activities cover the whole gamut of forestry management and operations.

- range management (1)
- recreational uses of forest lands (2)
- silviculture and tree physiology (4)
- soils, fertilizers and nutrition (1)
- timber and resources management; systems analyses (2)
- watershed management (1)
- wildlife x forestry interactions (2)
- wood anatomy and properties (2)
- wood chemistry (1)
- wood machining and processing (2)

There is also a number of adjunct professors, particularly in Wood Science.

## ORGANIZATION & REPRESENTATIVE

### University of British Columbia

#### Other Faculties

Vancouver, B.C. V6T 1W5

- Dr. R. Spratley

Research Administrator

#### In absentia

## ACTIVITIES

Many Faculties and Departments conduct research which bears on forestry or has a relevance to forestry activities. Some of the studies are more directly linked to forestry than others.

Amongst the more directly-related projects are:-

- bacterial digestion of cellulose (Microbiology)
- ecological classification (Botany)
- extractives from mature trees and their properties (Chemistry)
- health of forest industry workers (Medicine)
- pulp and paper research (Chemical Engineering & PAPRICAN)
- range management & ecology (Plant Science)
- resource management economics (Economics, Commerce and Business Administration, Community & Regional Planning, Institute of Animal Resource Ecology)
- soil classification, nutrition and humus (Soils)
- saw performance (Mechanical Engineering)
- structural properties of wood (Civil Engineering)
- wildlife studies (Animal Science, Institute of Animal Resource Ecology)

### University of Victoria

P.O. Box 1700

Victoria, B.C. V8W 2Y2

- Prof. R.N. O'Brien

for Dr. J.M. Dewey

Dean of Graduate Studies

Staff - 7, (In forestry areas) Research Grants 1982 approx. \$63,000

In addition to research in tree physiology and reproduction, physics and chemistry relating to forestry, 10 departments offer co-operative education programmes. Some of the workplaces are in forestry or forestry-related laboratories. The University has appointed several Adjunct Professors from PFRC and the Provincial service to help staff a Graduate Seminar Course in Forestry. The University hosts an annual Colloquium in Forestry and Agriculture Related Research, and one on Ecology also.

#### MANDATE

To conduct research and teach in programs that best serve the educational specialist and industrial needs of B.C. and Canada.

### Westwater Research Centre

University of British Columbia

2075 Wesbrook Mall

Vancouver, B.C. V6T 1W5

- Mr. A.H.J. Dorsey

Assistant Director

Staff - 7, (In forestry areas) (not all full-time),  
Annual Budget approx. \$330,000.

There are four research program areas:

- coastal resources management;
- water quality management;
- international river basin management;
- northern water resources planning and management.

To conduct interdisciplinary research on the management of natural resources, and so to provide an improved basis for decisions on policies and institutional arrangements.

Results are reported in books, a periodical "Westwater", and a report series.

**APPENDIX NO. 2**

**USERS OF BRITISH COLUMBIA'S FOREST ESTATE:**

**Their goals and obstacles**

- A. Managers of the Forest Estate**
- B. Users of the Forest Estate**

## A. MANAGERS OF THE FOREST ESTATE

### GOALS AND OBJECTIVES

#### 1. Ministry of Forests: the principal managing agency.

The legislative mandate of the Ministry is set out in the Ministry of Forests Act (1979), Section 4:

"Purposes and functions of the Ministry under the direction of the Minister are to:

- a) encourage maximum productivity of the forest and range resources in the Province;
- b) manage, protect and conserve the forest and range resources of the Crown, having regard to the immediate and long-term economic and social benefits they may confer on the Province;
- c) plan the use of the forest and range resources of the Crown, so that the production of timber and forage, the harvesting of timber, the grazing of livestock and the realization of fisheries, wildlife, water, outdoor recreation and other natural resource values are co-ordinated and integrated, in consultation and co-operation with other ministries and agencies of the Crown and with the private sector;
- d) encourage a vigorous, efficient and world competitive timber processing industry in the Province; and
- e) assert the financial interest of the Crown in its forest and range resources in a systematic and equitable manner.

Within this overall mandate the Ministry has goals:

1. To protect and maintain the natural productive capacity of the forest and range land base.
2. To produce required supplies of timber, forage and outdoor recreation opportunities in a cost-effective manner in order to encourage a vigorous, efficient and world-competitive forest industry; a viable ranching industry; and to facilitate public recreation enjoyment in forest and range environments.

This is further sub-divided into Timber, Forage and Recreation.

### OBSTACLES AND IMPEDIMENTS

A recent obstacle in the way of achieving sound forest management is an inadequate comprehension in the general public of the complexity of forest management issues. Proponents of a particular viewpoint frequently take an over-simplified position and so fail to realize that a simplistic "solution" is inappropriate.

The result is misunderstanding and confusion over land-allocation issues; security of the productive forest land-base is a case in point. To clarify or explain this situation, professional foresters are diverted from their nominal, productive assignments to time-consuming interviews and public forums.

Some topics, such as water management in the southern interior, for example, still require a considerable research effort; others, like the trees and deer controversy in the Nimpkish valley of northern Vancouver Island, require interpretation and economic evaluation leading to a policy decision.

A second serious impediment is lack of continuity and adequacy of funding for forestry management and research.

Understanding will be improved by better data and clear definition of management plans.

A. MANAGERS OF THE FOREST ESTATE (continued)

GOALS AND OBJECTIVES

OBSTACLES AND IMPEDIMENTS

3. To manage the forest and range resources of the Crown so that the production of timber, forage and recreation opportunity, the harvesting of timber, the grazing of livestock, the enjoyment of outdoor recreation; and the realization of fisheries, wildlife, water, and other natural resource values are co-ordinated and integrated, in consultation and co-operation with other Ministries and Crown agencies, the private sector and the public.
4. To achieve levels of timber and forage utilization that reflect effective use of the forest and range resources.

This is further sub-divided into Timber and Forage.

5. To assert the financial interest of the Crown in forest and range resources under the jurisdiction of the Ministry in a systematic and equitable manner.

The Provincial objectives are:

1. to maintain the annual timber harvest at 75,000,000 m<sup>3</sup> from all public and private forest land in B.C.;
2. to increase forage production to provide for 934,000 AUM's\* annually, by 1984-85, on Crown ranges;
3. to produce 40 recreational management plans aimed at protecting recreational values, the construction and management of 4,360 additional recreational campsites and picnic units, and 1,520 km of trails.

\* AUM = Animal unit month; the forage required to sustain one 450 kg cow, or her equivalent, for one month.

A. MANAGERS OF THE FOREST ESTATE (continued)

GOALS AND OBJECTIVES

OBSTACLES AND IMPEDIMENTS

2. Ministry of Environment

Long-term goals for fish and wildlife species.

1. to maintain the diversity of fish and wildlife species representative of the major biophysical zones of the province, and
2. to ensure within the constraints of habitat capability and biological limits of each species that fish and wildlife are available in sufficient numbers to meet the needs of society.

There is also a water management program.

Specific goals are:

1. To protect those unique, special and outstanding features and best representative landscape examples of natural heritage significance.
2. To provide an adequate and equitable distribution of areas to meet the diverse and changing outdoor recreational requirements of the public.
3. To establish a leadership level of service to the public, by example, in the planning, acquisition, development and operation of all areas for public benefit and use.
4. To ensure appropriate access to and within these areas (physical distribution - accessibility).
5. To designate these areas as provincial parks, recreation areas, or other appropriate designation under the Park Act (according to their inherent values and intended uses).

Census levels vary in intensity and accuracy. "Major industrial developments ... will continue ...". Lack of technical knowledge (animal population dynamics, feeding habits, minimum cover needs, etc.). "...may delay the attainment of certain objectives...", "... new legislation is required to assure more effective protection of habitats." Conflicting public demands "... may constrain achievement of some objectives or may require (their) modification."

Manpower and funding are inadequate.

In order of priority:

- Inability to assess fully the impacts of logging, road construction and chemical spraying on water quality.
- Lack of hydrometric data for stream crossing design to protect water quality and minimize flood damage.
- Inadequate techniques for cost-effective clearing of reservoirs.

A. MANAGERS OF THE FOREST ESTATE (continued)

GOALS AND OBJECTIVES

OBSTACLES AND IMPEDIMENTS

3. Ministry of Lands, Parks and Housing

Authority derives from Land Act (1979), Ministry of Lands, Parks & Housing Act (1979) and Provincial Park Act (1979).

Lands Division has a role to conserve, protect, allocate, acquire and manage Crown land for the immediate and long-term social and economic benefit of the Province.

Specific goals are:

1. To monitor and advise government on trends and issues in land use.
2. To co-ordinate inter-agency provincial land use policy formulation and provide leadership in the government service in dealing with land management issues.
3. To develop the framework for Provincial Crown land planning at various levels.
4. To develop policies and design programs for allocation, disposition, conservation, and management of Crown land administered by the ministry.
5. To evaluate the effectiveness of the land programs of the ministry.
6. To ensure high quality of land survey in British Columbia.
7. To maintain accurate, accessible, up-to-date records on Crown land in British Columbia and to develop and co-ordinate a land information system.
8. To design, select, secure and manage a representative provincial system of ecological reserves.

Parks Division designates and administers a system of land and water-based areas, including forested areas, which contain elements of B.C.'s natural and cultural heritage for the enjoyment, inspiration and recreational use of all British Columbians and their visitors.

Specific goals are:

1. To protect those unique, special and outstanding features and best representative landscape examples of natural heritage significance.
2. To provide an adequate and equitable distribution of areas to meet the diverse and changing outdoor recreational requirements of the public.
3. To establish a leadership level of service to the public, by example, in the planning, acquisition, development and operation of all areas for public benefit and use.
4. To ensure appropriate access to and within these areas (physical distribution -accessibility).
5. To designate these areas as provincial parks, recreation areas, or other appropriate designation under the Park Act (according to their inherent values and intended uses).

Efficiency and quality of decisions respecting the allocation and management of Crown land could be improved - this issue is receiving active consideration by the Ministry in co-operation with other agencies.

## B. USERS OF THE FOREST ESTATE

### GOALS AND OBJECTIVES

### OBSTACLES

#### Council of Forest Industries of British Columbia

There are three general goals.

1. The long-term national and provincial economic output from the forest resource is to be maximized, subject to social and environmental objectives and concerns.
2. The long-term social well-being derived from forest resources is to be optimized, including: employment and income distribution; security of life and health; provision of educational, cultural and recreational opportunities; and contributions to national security.
3. The quality of the environment is to be maintained and/or enhanced, including: air and water quality; ecosystems; and fish and wildlife resources.

From these three, a set of eight management objectives is developed.

#### FOREST MANAGEMENT GOALS AND OBJECTIVES

- 1) Harvest Levels - The B.C. forest industry to operate at the highest possible sustainable level of harvest annually, subject to the reasonable aspirations and needs of cattlemen and other forest users also being met.
- 2) Coordinated Resource Management - All of B.C.'s forest lands to be managed on a coordinated resource management basis, which implies that all forest land resource managers will cooperatively share their individual resource inventories and long-term management plans, and will enter into compromises or trade-offs where appropriate cost/benefit analyses show these to be justified. This approach does not assume that each hectare of forest land will be used for every purpose, but rather that broader areas will be used to accommodate all desirable and justifiable users on a coordinated basis. Another term for this might be "planned coexistence".

#### OBSTACLES TO SUCCESS (ACTUAL, POTENTIAL OR PERCEIVED)

- Limitations of economic harvesting access and technology
- Not all lands at optimum production levels
- Unnecessary land withdrawals, direct or indirect, to accommodate other land users
- Jurisdictional conflicts or jealousies
- Legislative constraints, real or perceived
- Lack of inventories or plans by other resource managers
- Lack of a widely acceptable cost/benefit analysis methodology
- Lack of basic data on impacts, resilience, and mitigation opportunities as a basis for planned integrated management
- Lack of a "vehicle" to coordinate and integrate

## B. USERS OF THE FOREST ESTATE (continued)

### GOALS AND OBJECTIVES

### OBSTACLES

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| <p>3) <u>Land Allocations</u> - Single-use designations of forest lands to be kept to an absolute minimum, and only after it has been clearly demonstrated that the intended purpose is justified and yet cannot be accomplished by another formal or informal procedure.</p> <p>4) <u>Land Base Preservation</u> - There is to be no net reduction in the overall timber production capability available to the province's forest industry, from that which currently exists, subject to the results of appropriate cost/benefit analyses.</p> <p>5) <u>Silviculture Funding</u> - Investments in reforestation and all other phases of silviculture to be made by the public or private land owners at the maximum levels which can be justified in economic terms, considering all predictable uses of the specific forest lands.</p> <p>6) <u>Utilization</u> - Utilization of the available timber resource of all species to be at the highest level of efficiency which can be economically justified, recognizing the need to leave forest nutrients on site.</p> <p>7) <u>Pesticides</u> - Forest land managers to have available to them a range of approved chemical and biological herbicides and insecticides for use as forest management tools, and the legal right to use these tools under realistic prescribed conditions.</p> <p>8) <u>Estuaries and Shorezones</u> - Coordinated resource management of estuaries and other coastal shorezone areas to ensure that timber harvest may continue to be moved to manufacturing mills, and subsequently to markets, in an efficient and economical manner.</p> | <ul style="list-style-type: none"><li>- Lack of commitment by politicians</li><li>- Lack of agency/public commitment to (or understanding of) the objectives and principles of coordinated resource management</li><li>- Lack of a "system" of allocation for best 'good'</li><br/><li>- Lack of understanding or acceptance of this new principle by politicians or the public (though it has already been accepted in terms of the fisheries resource, on an even narrower basis)</li><br/><li>- Lack of adequate "proof" that these expenditures are always economically justified</li><li>- Commitment by politicians for Crown land investments</li><li>- Realistic incentives for industry activity in intensive silviculture operations</li><li>- Existing tax disincentives to private woodlot land owners</li><br/><li>- Lack of successful research to facilitate the economic use of hardwoods and some grades/species of softwoods</li><li>- Need for further technological advances in harvesting, manufacturing and marketing operations</li><li>- B.C.'s economic structure in a world-competitive situation</li><br/><li>- Overly cautious registration process and hence excessive or even prohibitive development costs to the manufacturer</li><li>- Inappropriate public perceptions of the needs and risks of pesticides, especially chemicals</li><br/><li>- Lack of research to prove/disprove assumed biological effects of various log handling activities</li><li>- Public pressures for single-use allocations</li></ul> |
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## B. USERS OF THE FOREST ESTATE (continued)

### GOALS AND OBJECTIVES

#### Northern Interior Lumber Sector (C.O.F.I.)

The members' goal is "to increase their share or control of the market" by:

- 1) acquisition of existing operations; or
- 11) increasing the volume of timber harvested from a given area;

that is, increasing their annual allowable cut (A.A.C.).

#### Cariboo Lumber Manufacturers' Association

Paramount concern is for maximization of the long-run sustainable yield from the CLMA timber base, subject to sound economics.

### OBSTACLES

#### 1. Land Alienation

"... withdrawals of forest land ... translate directly into lost A.A.C."

2. Section 88 funding for silviculture and access. "Ownership and hence management responsibility ... rests largely with the Crown ... government must be made aware (of the need to) increase their levels of funding for timber management ..."

3. Utilization Policy changes, tax incentives and research are needed to bring about effective utilization of species currently deemed non-merchantable.

4. Herbicides "... greater use of herbicides as a silvicultural tool ..."

5. Forest Management- Integrated use of the forest requires that confrontations be replaced by factual decisions based on:
  - 1) current inventory and research data;
  - and 11) cost/benefit analysis of possible alternatives.

#### 1. Technology Transfer

"Incorporation of technological advances ... are essential" to achieving CLMA's goal. Appropriate fiscal and regulatory policies to encourage and facilitate this incorporation are needed.

#### 2. Forest Management

Improved silviculture will enhance productivity, and, hence, yields.

Areas of Improvement include:-

- more site-specific treatments;
- avoidance of delays in reforestation, rehabilitation of NSR sites and decadent stands.

#### 3. Land alienation

A halt to loss of forest land to competing land uses is needed; benefit-cost analysis to identify social and economic benefits derived from forestry will help.

B. USERS OF THE FOREST ESTATE (continued)

GOALS AND OBJECTIVES

OBSTACLES

Interior Lumber Manufacturers' Association

To ensure the continued economic health and profitability of member companies.

Timber supply - threatened by single-use alienations; a clear commitment by Government to multiple-use is needed, backed up by an objective cost/benefit analysis procedure to facilitate land-use decision making.

Silvicultural funding - adequate stable funding is essential.

Research - Improved control of and response to insect attacks is needed; realistic regulations to permit efficient use of herbicides are needed.

B.C. Cattlemen's Association

To maintain and enhance a viable beef cattle industry in B.C.

Note: Ministry's target of some 950,000 AUM's was reached without industry input.

High production costs relative to selling prices.

Resource limitations (land and water) and an imbalance between forage production on private lands and on Crown ranges.

Inadequacy of facilities for local finishing of calves and yearlings.

Resolution of the cattle x grass x trees conflict, on an area-specific basis is essential.

Economic analyses of single-use v. multiple-use are lacking.

Macro-economic long-term cost/benefit analyses are desirable.

Availability of summer ranges in southern Interior is the principal limiting factor to expansion of the beef herd.

Site-specific data on forage production and responses to management are lacking.

Two humanistic problems are cited - attitudes and failure to communicate fully.

B. USERS OF THE FOREST ESTATE (continued)

GOALS AND OBJECTIVES

Outdoor Recreation Council of B.C.

The Outdoor Recreation Council, an "umbrella" organization of more than 30 organizations, has as its broad objectives the "Promotion, enhancement and protection of the Province's outdoor recreation resources."

To encourage and facilitate integrated uses of all portions of the forest estate.

OBSTACLES

There are conflicts of interest within a diverse group of users which includes such disparate activities as snowmobiling, automobile sports, hiking and bird-watching.

Resolution of conflicts between recreationists and industrial users through policies of multiple-use and rational decision-making is necessary.

Safe use of the outdoors, to minimize accidents and the attendant unfavorable publicity is of concern.

Access to the outdoors must be continually fostered, by map-production and trail construction.

Quantitative evaluation of intangible or non-commercial benefits; the use of socio-economic models in such evaluations.

Determination of tourist/recreational expenditure in B.C.; separation of 'Imported' from 'Internal' expenditures.

Guidelines for land-use decision making are lacking.

B. USERS OF THE FOREST ESTATE (continued)

GOALS AND OBJECTIVES

OBSTACLES

B.C. WILDLIFE FEDERATION

Acknowledging the growing demands on B.C.'s shrinking forest land base, the Federation calls for a comprehensive, long-term forest land-use plan and management policy recognizing multiple and integrated uses.

- A. Forest Land-Use - eight points:  
supporting integrated uses, open planning and organized access. A comprehensive land-use plan should be developed prior to alienation of crown land.
- B. Forest Management - six points:  
supporting A.A.C.'s based on sound inventory, reforestation and re-seeding; calling for harvest planning to allow for wildlife and catchment needs, and advocating use of prescribed burning as a habitat management tool.
- C. Range Management - five points:  
calling for open planning and carrying capacity determinations, and for resource enhancement.
- D. Forest Protection - five points: not opposed to thoughtful use of pesticides, calling for identification of fire suppression zones.

Lack of an acceptable methodology and consistent analyses of forest land options.

Inadequate reliable information on the effects on water and fish and on wildlife\* of

- logging old growth stands
- intensive forestry practices
- fire suppression
- effects of chemicals in the environment

Insufficient funding for recreational uses of the forest, i.e. trails, campsites, etc.

Inadequate information on cattle x wildlife interactions.

\* Wildlife here includes game spp., fur bearers, non-game spp. and birds.

